

## VIRTUAL KEYBOARD WITH MULTILINGUAL SUPPORT.

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### ABSTRACT

In Today's world security is considered as a very important factor for any application, irrespective of the platform on which it is developed. Various features have been implemented in Java, .net to secure an application. One of them is Virtual Keyboard. We have proposed same concept in mainframes. Virtual keyboard will be visual on CICS map and password will be entered through the screen. We have also used multilingual support for virtual keyboard. It will display virtual Keyboard in different language. Terminal ID will decide which Keyboard to be displayed as a default keyboard. User will have option either to use virtual keyboard or not.

*Keywords* – Cursor position on CICS map, Stringing characters, terminal ID

### I. INTRODUCTION

For any application, security is the most critical factor. Hackers always try to break security of application and collect confidential information about organization.

This is a major issue with mainframes as all of its transactions are done through keyboard. Security of an application can be easily broken by simply installing a key logger. It could detect which key has been pressed and can retrieve password.

With increase in there arise need to make an application more secure.

Virtual keyboard is one of advanced security measure to safeguard an application. It has a virtual keyboard displayed on the login screen with random position of keys.

In our application we have developed virtual keyboard for English as well as Spanish language. We have taken two terminal ID s for each of them. One language will be default for specific terminal ID. According to given ID that particular keyboard will get displayed.

We are retrieving the password according to the position of the cursor on the CICS map, whenever control key (aidkey) is pressed. and the password is displayed as string of asterisks ('\*') to hide password from others.

### II. ALGORITHM

Our research provides scope for the user (stakeholders) to log-in through virtual keyboard with either Spanish or English. The default keyboard will be provided depending on the terminal ID used.

The algorithm behind the behind it is as follows:

- (a) When user log-in, a virtual keyboard will appear. It depends on terminal ID that which keyboard will appear
- (b) Enter user ID from keyboard
- (c) To enter password, place cursor on key to enter password
- (d) Characters should be entered in the sequence of password
- (e) If user ID and password are matched then, user will be logged-in, otherwise error message will be displayed .

### III. FIGURES AND TABLES

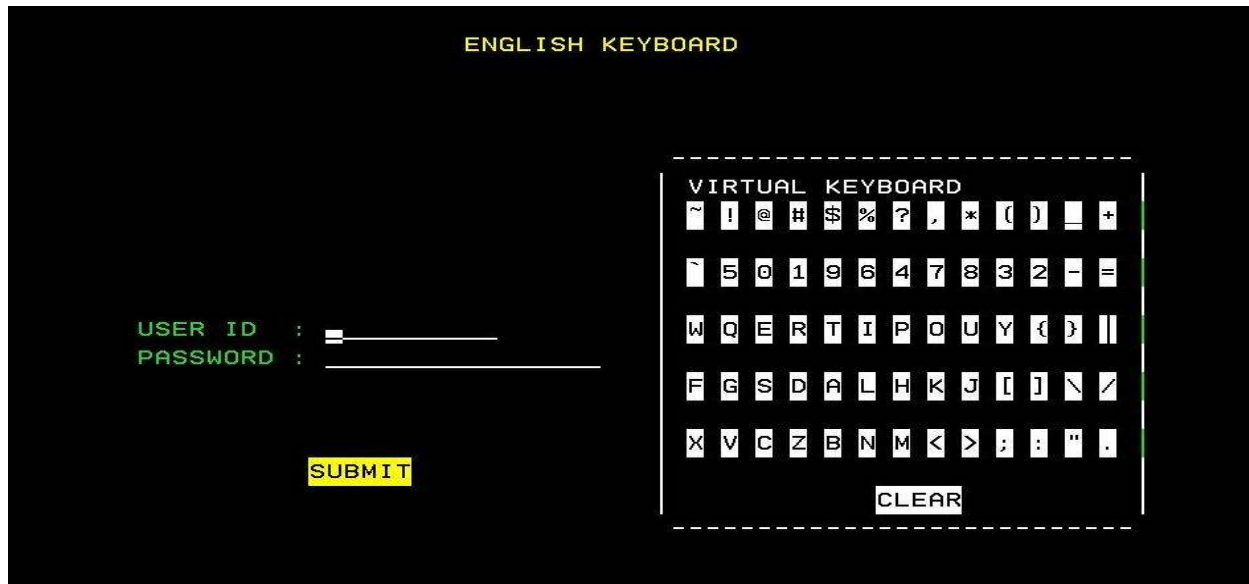


Fig 1.1 English Virtual Keyboard



Fig 1.2: Spanish Virtual Keyboard

```
EDIT          TRT116.CICS.MAPS4(YT000161) - 01.18          Columns 0000
007600      CHECK1-PARA.
007700          IF WS-COUNT < 12
007800          EVALUATE TRUE
007900              WHEN EIBCPOSN = 602
008000              ADD 1 TO WS-COUNT
008100              MOVE '~' TO WS-TEMP
008200              WHEN EIBCPOSN = 604
008300              ADD 1 TO WS-COUNT
008400              MOVE '!' TO WS-TEMP
008500              WHEN EIBCPOSN = 606
008600              ADD 1 TO WS-COUNT
008700              MOVE '@' TO WS-TEMP
008800              WHEN EIBCPOSN = 608
008900              ADD 1 TO WS-COUNT
009000              MOVE '#' TO WS-TEMP
009100              WHEN EIBCPOSN = 610
009200              ADD 1 TO WS-COUNT
009300              MOVE '$' TO WS-TEMP
009400              WHEN EIBCPOSN = 612
```

Fig 1.3: Code to get character form screen

```
028400      EVALUATE WS-COUNT
028500          WHEN 1
028600          MOVE '*' TO PAS250
028610          PERFORM USERID-PARA
028700          WHEN 2
028800          MOVE '**' TO PAS250
028810          PERFORM USERID-PARA
028900          WHEN 3
029000          MOVE '***' TO PAS250
029010          PERFORM USERID-PARA
029100          WHEN 4
029200          MOVE '****' TO PAS250
```

Fig 1.4: code to Display asterisk for password

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      TRT116.CICS.MAPS4(YT000161) - 01.18      Columns 00001
030800      PERFORM A005-SEND-MAP-PARA.
031700      USERID-PARA.
031941      COMPUTE WS-POS = WS-COUNT - 1
031950      STRING WS-ALPHA(1:WS-POS),
031960      WS-TEMP DELIMITED BY SIZE INTO WS-ALPHA
031970      END-STRING
032400      EXEC CICS SEND TEXT
032500      FROM(WS-ALPHA)
032700      END-EXEC.
```

Fig 1.5: code to string password

## CONCLUSION

Our research helps user to keep their information secure. Threat from key logger is reduced to great level with mainframes.

Although we have used only two languages at this stage, we can implement virtual keyboard with various other languages. Also we can change position of keys on monitor every time virtual keyboard will be called. We have implemented this research to make application secure at basic level and introduce the concept of virtual keyboard.

## REFERENCE

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[2] Murarch's CICS for COBOL Programmer.  
[3] Designing and programming CICS application.  
[4] Continuous guidance by Technical lead Mr. Robin Tommy, TCS.